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**Civilian Radioactive Waste Management System  
Management & Operating Contractor**

**Management and Operating Contractor Safety and Health Plan**

**B00000000-01717-4600-00016 REV 03  
(SCPB: N/A)**

**April 1999**

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Prepared for:

U.S. Department of Energy  
Yucca Mountain Site Characterization Office  
P.O. Box 30307  
North Las Vegas, Nevada 89036-0307

Prepared by:

TRW Environmental Safety Systems Inc.  
1261 Town Center Drive  
Las Vegas, Nevada 89134-6352

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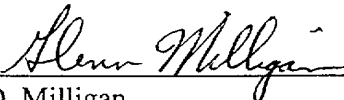
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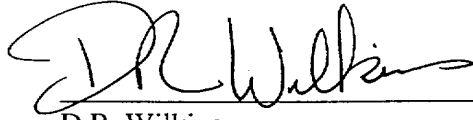
**April 1999**

Prepared by:

  
\_\_\_\_\_  
G.D. Milligan  
Plans and Programs

4/12/99  
Date

Approved by:

  
\_\_\_\_\_  
D.R. Wilkins  
Assistant General Manager,  
Monitored Geologic Repository

4-15-99  
Date

## FOREWORD

The Civilian Radioactive Waste Management System Management and Operating Contractor Safety and Health Plan is the fundamental document that establishes the Management and Operating Contractor Safety and Health program. The Plan provides the basis to guide management's successful implementation of the Management and Operating Contractor Safety and Health Policy's principles as well as incorporation of Integrated Safety Management functions and principles into all Management and Operating Contractor activities. Implementing these principles aids in meeting a major objective which is to advance the Safety and Health program into the nuclear culture as the Project moves towards a License Application.

Recommended changes to this Plan may be submitted to the Management and Operating Contractor Safety and Health Manager.

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## ACRONYMS AND ABBREVIATIONS

AGM	Assistant General Manager
DOE	U.S. Department of Energy
FWP	Field Work Packages
GUT	General Underground Training
IH	Industrial Hygiene
ISM	Integrated Safety Management
JSA	Job Safety Analysis
M&O	Management and Operating Contractor
MGR	Monitored Geologic Repository
NFPA	National Fire Protection Association
NTS	Nevada Test Site
OHN	Occupational Health Nurse
OSCR	Occupational Safety Compliance Report
PHA	Preliminary Hazard Analysis
PI	performance indicator
PPE	Personnel Protective Equipment
S&H	Safety and Health
SSA	Systems Safety Analysis
YMP	Yucca Mountain Site Characterization Project

# 1. SAFETY AND HEALTH PROGRAM ADMINISTRATION

## 1.1 INTRODUCTION

The development and implementation of this Plan supports the Management and Operating Contractor's (M&O's) commitment to ensure that each employee is provided with a safe and healthy work environment. In addition, the Plan is the foundation supporting Integrated Safety Management (ISM) and reflects the M&O's commitment to comply with Federal and state laws, regulations, standards, and U.S. Department of Energy (DOE) directives applicable to safety and health.

## 1.2 PURPOSE

This plan defines the M&O's program to protect the safety and health of M&O participant employees, employees of other affected organizations when they are in M&O controlled workplaces, and the general public; minimize property damage; avoid unacceptable delays or negative impacts to the Yucca Mountain Site Characterization Project (YMP) due to accidents; and ensure compliance with Safety and Health (S&H) requirements.

The primary purpose of this S&H plan is to identify the necessary program elements that establish an effective S&H program and describe the organizational responsibilities for implementing and managing the S&H program. To meet the obligation of establishing a nuclear culture, the S&H program must strive for continuous improvement until it reaches a level of world class proficiency.

This Plan is an affirmation of the M&O's full commitment to the Core Functions and Guiding Principles described as the ISM program.

## 1.3 SCOPE

The requirements of this plan apply to employees while they are performing work at any M&O location. This includes work performed in Las Vegas locations, at Nevada Test Site (NTS), adjacent to Bureau of Land Management and U.S. Air Force lands, and at other locations, such as Death Valley, outlying science centers, and the Vienna/Washington, DC areas. This plan applies to organizations that have agreed to take direction or guidance from the M&O and to subcontractor and consultant personnel who perform work under contract to the M&O. It provides the framework for development of policies, procedures, manuals, rules, and programs necessary for implementation of a comprehensive integrated S&H program that is characterized by continuous improvement.

Environmental issues are not covered by this plan.

The requirements of *Quality Assurance Requirements and Description* (DOE 1998) have been determined not to be applicable to S&H programs on the YMP. The counterfeit/suspect parts program requirement in DOE Order 440.1A, Worker Protection Management for DOE Federal &



Contractor Employees, Attachment 2, 9.e, falls under the quality assurance procurement program and is outside the scope of this plan.

## **1.4 POLICIES**

### **1.4.1 S&H Policy**

The M&O S&H Policy is described in POL-SH-001, *Principles of Safety and Health* (CRWMS M&O 1998c). The five principles are:

- A. Accident prevention to eliminate injuries and illnesses.
- B. Work to safety and health standards.
- C. Create safe workplaces.
- D. Management's commitment to employee empowerment and involvement in the S&H program.
- E. Hold management and employees accountable for implementing and practicing work safety.

All employees, from senior management to craftsmen, are responsible for setting up and performing work in a manner that is consistent with established S&H procedures, rules, and good work practices. Every employee is expected to plan and perform work in a manner that is accident free and to participate in promoting a culture of safety consciousness and continuous improvement.

### **1.4.2 ISM**

ISM is a process required by DOE that is contractually imposed on the M&O to develop and implement. Toward meeting that obligation, the M&O has established an ISM policy that implements the five core functions and seven guiding principles DOE has set forth as the basis for the program. This M&O policy is POL-MG-002, *Integrated Safety Management System* (CRWMS M&O 1998b).

## **1.5 RESPONSIBILITIES**

### **1.5.1 M&O General Manager:**

Provides the lead in establishing the vision for excellence in the S&H program and ensures that management fully adopts an integrated approach to safety and health.

### **1.5.2 Monitored Geologic Repository (MGR) Assistant General Manager (AGM):**

Provides management oversight to ensure work activities are conducted in an integrated manner that protects the safety and health of the public, M&O employees, and employees of YMP participants; and

Ensures that funding is provided to maintain S&H manpower, resources, and other safety-related costs to meet this plan's requirements.

#### **1.5.3 AGM, Waste Management and Integration:**

Supports the MGR AGM in implementing the S&H program.

#### **1.5.4 Director, Regulatory and Licensing:**

Supports the MGR AGM in implementing the S&H program.

#### **1.5.5 M&O S&H Manager:**

Plans, administers, and coordinates the M&O S&H program toward a commitment to excellence;

Maintains this plan and ensures the plan elements are fully implemented;

Ensures the S&H program conforms to applicable safety and health laws, regulations, and DOE directives;

Develops a long range strategic plan to guide the implementation of the S&H program toward the ultimate objective of a recognized world class program;

Assists the M&O training department in identifying safety training needs and requirements and developing training lesson plans by providing subject matter expertise;

Mentors the development and implementation of ISM;

Develops and maintains M&O safety procedures, rules, safety promotion programs, performance indicators (PIs), and a safety suggestion program;

Manages employee occupational health and wellness programs;

Maintains the fire protection and emergency management programs;

Maintains a qualified S&H staff;

Plans the S&H budget; and

Prepares reports as required by this Plan.

#### **1.5.6 M&O S&H Professionals**

Provide input, as requested and appropriate, into development of Project documents including, but not limited to:

- Field Work Packages (FWPs)
- Project Description Document

- System Description Documents
- Designs
- Enhanced Design Alternatives
- Preliminary Hazard Analyses (PHAs)
- Nevada Work Instructions
- Job Safety Analyses (JSAs)
- System Safety Analyses (SSAs)
- ISM
- Plans
- Procedures
- Training lesson plans and modules
- Safety handbooks
- Title III Evaluation Reports

Perform reviews, and comment on, the same documents previously listed, as appropriate.

**NOTE:** Whenever input into the creation or revision of a document is made, or the task is to critically review a new or revised document, the S&H staff shall ensure the ISM Core Functions are addressed as they are applicable. S&H input shall specifically question:

- Is the Scope of Work adequately defined?
- Have hazards been identified and analyzed?
- Are hazard controls identified so they can be implemented?
- Is it evident the work can be safely conducted within the controls identified?
- Is a feedback mechanism established, as necessary, that identifies needed changes and how any change will be implemented?

Inspect worksites and work activities for compliance with S&H requirements and ensure the activity is being conducted according to the following ISM Guiding Principles, as appropriate:

- Line management and employees accept responsibility for their conduct in the activity
- Clear authority and accountability are defined for the activity
- Employees possess adequate knowledge and skills to perform the work and actually perform the work accurately the first time, every time
- Appropriate budget resources have been allocated so the work can progress safely
- Adequate identification of safety standards has been made in all work areas
- Appropriate hazard controls are tailored to the activity
- No work is authorized to be performed if it cannot be done safely

### **1.5.7 Managers/Supervisors:**

Take responsibility and assume leadership for the overall conduct of the S&H program in their work areas and for their employees;

Ensure the implementation of ISM functions and principles;

Encourage and promote the participation of employees in the S&H program;

Correct unsafe and unhealthful work conditions or employee actions;

Establish safe work task procedures;

Ensure compliance with S&H procedures and rules;

Ensure employees are trained and qualified to safely carry out their work assignments;

Conduct S&H meetings on a routine basis;

Process employee complaints promptly and fairly; and

Investigate and report employee injuries/illnesses and property damage events.

### **1.5.8 Site Facilities Manager:**

In addition to the responsibilities described in Paragraph 1.5.7, the Site Facilities Manager:

Conducts routine Area 25 work site S&H inspections;

Ensures equipment and operating systems' preventative maintenance programs are effective;

Ensures defective equipment is promptly repaired or removed from service until repaired;

Ensures that subcontractors comply with the requirements of this plan; and

Ensures compliance with the *M&O Sanitation Plan* (B000000000-01717-4600-00151 REV 00B, Draft, Las Vegas, Nevada: Civilian Radioactive Waste Management System M&O, ACC: DRC.19990311.0012).

### **1.5.9 Employees:**

Work in a safe and prudent manner;

Comply with established procedures and rules;

Promptly bring unsafe/unhealthful conditions and practices to management's attention;

Report any injury, illness, or property damage to supervisor; and

Participate on safety committees, as assigned.

**1.5.10 M&O Training Manager:**

Plans, administers, develops, presents, and documents safety training programs; and

Develops and maintains a training matrix.

**1.5.11 Human Resources Department:**

Maintains position descriptions that reflect the S&H requirements for that position.

**1.5.12 Architectural Engineer:**

Ensures appropriate aspects of safety, fire protection, and industrial hygiene are incorporated, or accounted for, in designs and equipment/materials specifications.

**1.6 REGULATIONS AND STANDARDS**

Compliance for this plan is based on requirements established in the M&O's contract with the DOE. By contract, the M&O complies with DOE directives. Most of the S&H regulations and standards are derived from DOE Orders including Occupational Safety and Health Administration 29 CFR 1910, Occupational Safety and Health Standards; 29 CFR 1926, Safety and Health Regulations for Construction; American Conference of Governmental Industrial Hygienists Threshold Limit Values; and National Fire Protection Association (NFPA) Standards. YMP operations are also subject to Nevada Revised Statute 618.383, Occupational Safety and Health.

**1.7 S&H TRAINING**

The S&H Manager identifies S&H training requirements and assists in developing lesson plans as requested by the Training Department Manager. Training shall be conducted according to the Training Plan directives. S&H training attendance records are maintained by the Training Department in accordance with that plan or as required by a statutory standard. The Training Department is responsible for developing and maintaining an S&H training matrix that identifies training requirements by job or task category.

Certain mandatory training programs are conducted by the Training Department or others as noted. These are:

- Each Affected Organization will provide any company orientation for its employees.
- Each employee will attend YMP Orientation.
- Personnel who require unescorted access to Area 25 and the surrounding regions must complete General Employee Training. Annual refresher training is required.

- Personnel whose work assignments are in the tunnel must complete General Underground Training (GUT). Annual refresher training is required.
- First aid training is part of GUT and is also required for personnel working in remote locations. First aid training is renewed every three years except for CPR training, which must be renewed annually.
- Supervisor training on S&H duties and responsibilities.
- Underground rescue training taught to rescue team members by the rescue team supervisor.
- Job specific S&H training (e.g., hearing conservation or respirator use) is provided by S&H.
- JSA task training by Managers/Supervisors.

Managers and supervisors are responsible for determining if an employee needs General Employee Training or GUT and for scheduling employees to attend initial and refresher training classes.

## **1.8 SAFETY COMMUNICATION AND PROMOTION**

### **1.8.1 S&H Committees**

The M&O safety committee system is a highly structured program implemented through procedure PRO-SH-017, *Environment, Safety and Health Committee System*. This procedure establishes several permanent committees and defines their missions and charters. Heading the committee system is the ISM Executive Committee chaired by the MGR AGM. The other committees address specific functions and issues and are considered subcommittees of the ISM Executive Committee.

### **1.8.2 Organization Safety Meetings**

Managers shall divide their organizations into appropriate groupings for purposes of conducting routine safety meetings.

Meetings for office-based employees shall be conducted at least quarterly. More frequent meetings shall be scheduled based on the level of risk of work activities. Daily and weekly "toolbox" meetings are required for construction operations.

Subjects covered and an attendance roster will be documented for each meeting. Copies of this documentation will be forwarded to the M&O S&H Manager.

### **1.8.3 S&H Communications**

The S&H Manager shall publish an S&H newsletter on a monthly basis. The newsletter will contain on- and off-the-job subjects, review procedures, and describe lessons learned from

incidents. The normal distribution will be through posting in the Lotus Notes Safety and Health Information database.

Additional S&H information will be supplied by posting on the S&H bulletin boards found in all major M&O facilities. The S&H Policy shall be permanently posted in all facilities.

#### **1.8.4 Workers' Rights**

Employees have specific safety and health rights under the law and as listed in DOE Order 440.1A. These rights include:

- Accompanying DOE S&H personnel during inspections
- Declining to perform work if the employee has a reasonable belief that conditions pose an imminent risk of death or serious bodily harm
- Access to DOE worker protection publications, DOE standards, and rules and procedures
- Observation of monitoring for workplace environmental agents and access to monitoring results
- Notification when monitoring indicates the employee is overexposed to workplace environmental agents
- Obtaining results of inspections and accident investigations upon request
- Being informed of these rights and how to exercise them

Employees concerned with S&H issues are encouraged to bring them to the attention of their supervisor by using the complaint process set up in PRO-SH-015, *Correcting and Resolving Unsafe Safety or Health Conditions*. This procedure is intended to deal with safety and health concerns from minor issues to imminent danger conditions requiring a stop work order. Supervisors are expected to take prompt action to either correct the problem or elevate the issue to higher management levels for resolution. While a resolution is being developed and implemented, the supervisor will take appropriate action to ensure employees are protected, and if an imminent danger exists, the supervisor will barricade the area and take appropriate action to warn others.

Supervisors are also expected to report back to employees with any resolution, or progress being made toward resolution, on their concerns.

Employees have the right to report their concerns directly to the DOE through the Office of Civilian Radioactive Waste Management Concerns Program Hotline, which is defined in AP-32.1, *Office of Civilian Radioactive Waste Management Concerns Program*. It is M&O policy that employees can expect to voice their concerns without fear of reprimand, retaliation, harassment, duress, or any other form of reprisal, regardless of how they do so.

Employees have the right to stop work if the workplace has a condition that could lead to death or serious injury to themselves or others. The area supervisor is responsible for isolating the condition and taking corrective action before allowing employees to return to work.

## **1.9 ACCIDENT INVESTIGATION AND REPORTING**

Injury/illness/property damage reporting, input to the DOE Computerized Accident/Incident Reporting System, and the M&O Occupational Safety and Health Administration 200 log are controlled and maintained according to the procedures set forth in PRO-SH-001, *Occupational Injury/Illness/Property Damage Reporting and Investigation*. Employees are responsible for reporting accidents to management in accordance with that procedure. Supervisors are responsible for thoroughly investigating accidents and ensuring they are properly and promptly reported to the S&H Manager. Determinations classifying injuries and illnesses are the S&H Manager's responsibility. Determinations of property damage costs are the responsibility of the Manager/Supervisor in charge of the facility or vehicle.

The Manager/Supervisor in charge, in concurrence with the S&H Manager, is responsible for notifying DOE when preliminary investigation indicates an accident appears to meet the criteria of DOE Order 225.1A, Accident Investigation, that requires conducting either a Type A or B investigation. M&O preliminary investigations are conducted in accordance with PRO-SH-010, *Interim Accident Investigation*. The preliminary investigation will review any possible contribution by drugs or alcohol. If reasonable suspicion is determined, "for cause" drug testing shall be conducted as provided in PRO-SH-010. Accident notification shall occur within the time period allowed by the Occurrence Reporting and Processing System, which is maintained by the Site Facilities Manager.

## **1.10 S&H REPORTS**

The S&H Manager is responsible for ensuring that appropriate records and documentation associated with the S&H program are maintained in accordance with applicable statutory requirements, DOE Orders, Yucca Mountain Site Characterization Office directives, this Plan, and established procedures.

The S&H Manager produces the following reports:

- A monthly report on the following subjects, as appropriate:
  - Open Safety Analysis items with proposed corrective actions (Systems Engineering)
  - Open items remaining from readiness reviews and proposed actions (Site Facilities Manager)
  - An Occupational Safety Compliance Report (OSCR) summary with trending analysis



- Open OSCRs and their abatement date
- Training concerns (M&O Training department)
- Medical concerns
- Fire safety concerns
- Industrial hygiene concerns
- Safety concerns

**NOTE:** Some items listed above indicate the department responsible for providing data to the S&H Manager in parentheses. Each item will cover a one-month period ending on the last day of each month and will be submitted to the S&H Manager no later than the 10th day of the following month. The S&H Manager will compile and produce this report by the 15th day of the following month.

- A monthly summary of industrial hygiene data that includes, as appropriate:
  - Work activity(s)
  - Contaminant/hazard(s)
  - Health standard(s)
  - Monitoring method(s)
  - Number of samples
  - Range of sample values
  - Trends and statistical distributions of standard exceedance (if any)
  - Consequences of exceedances (if any)
  - Planned corrective actions (if any)
- A monthly PI report of S&H experience containing the following:
  - Safety suggestions
  - Perception survey
  - Workplace inspections/communications
  - Environmental surveillances
  - Total recordable and lost workday case incidence rates
  - Occurrence Reporting and Processing System reports
  - Investigations
  - Near-miss incidents
  - Improvement action plans/abatement plans
  - Causes and trends
  - Safety meetings
  - Safety-related training
  - Emergency drills and exercises
  - As low as reasonably achievable activity

The S&H Manager revises this list of indicators, as appropriate. Environment, Safety and Health goals are established within each PI as appropriate.

The monthly PI reports are summarized in a quarterly report that is forwarded to the DOE.

- An Annual Fire Risk Summary of fire damage experience.
- An annual summary of safety experience data.
- An annual property evaluation report.

The S&H reports listed above are distributed to line management to provide analytical data that assists managers/supervisors in continuously improving their safety program. These reports are also sent to the DOE.

## **1.11 AVIATION**

Whenever an M&O department wants to bring an aircraft onto the NTS or other land areas involved in the YMP, it will coordinate with the Yucca Mountain Site Characterization Office/Office of Project Execution prior to the date the aircraft is scheduled to arrive.

## **2. SAFETY**

### **2.1 HAZARD RECOGNITION AND CONTROL**

The S&H program is based on continuous improvement with the objective of eliminating unsafe workplace conditions and controlling unsafe acts by employees. One of the primary methods used to achieve this goal is direct observation by line supervisors and the S&H professionals. These inspections are documented using the OSCR form and brought to the attention of line management for corrective action. Each OSCR is entered into a database and tracked through closure. This process is controlled by PRO-SH-006, *Occupational Safety Compliance Reporting*.

Line management, particularly front line supervisors, are expected to observe their workplaces daily and take prompt action to eliminate unsafe conditions. They must also observe employees as they perform their tasks and correct unsafe acts or work habits through counseling and training. Corrective actions beyond the authority of a supervisor must be promptly brought to higher management's attention. Supervisors are expected to discuss observations of unsafe conditions and incorrect work practices in employee safety meetings and suggest ways to eliminate these.

As the need arises, management shall implement specific programs that focus on persistent safety problems. These programs may take various forms in order to tailor the solution to a problem's unique characteristics. One additional objective is to increase the employees' level of awareness to recognize and help eliminate these problems.

The S&H program is audited by the Environment, Safety and Health Compliance staff. These assessments follow the requirements of *Environmental Management Plan* (YMP 1998b) and its flowdown procedure PRO-TS-026, *Environmental, Safety, and Health Assessments*.

## 2.2 S&H REVIEW PROGRAM

When FWP, designs, equipment/material specifications, operating plans, and Work Instructions are developed, the document originator(s) will fully consider all S&H requirements in purchasing equipment, developing a design, or conducting an activity.

The S&H Manager is a designated reviewer for these documents to ensure safety and health is appropriately considered. The S&H Manager is also a member of the M&O Change Control Board as the board's designated safety reviewer.

The Specialty Engineering department conducts SSAs on designs as required by *System Safety Plan* (YMP 1995) and its flowdown procedure YAP 30.48, *System Safety Analysis*. The S&H Manager reviews each SSA to verify appropriate issues have been identified and adequate mitigation proposed for the design.

## 2.3 HAZARD ANALYSIS

The M&O conducts various safety reviews on work activities. A PHA is conducted prior to commencement of all large-scale projects to ascertain if there are risks that are unacceptable or that previously have not been recognized and evaluated. FWP originator(s) will perform a PHA which will accompany the FWP through the approval process (by policy, FWPs are normally considered "large-scale projects"). These findings may lead to a JSA, which is a more detailed analysis at job task levels. Subsection 2.2 discusses the application of SSAs to design. This subsection relates to activities occurring after the design phase.

JSAs are conducted on tasks and field activities for which the M&O is responsible when job procedures are perceived as inadequate, the task has unique characteristics not previously encountered, a series of accidents has occurred while performing a job, or new equipment or work practices are introduced. JSAs must be approved by the S&H Manager prior to being implemented and are conducted according to PRO-SH-011, *Conducting a Job Safety Analysis*.

The first consideration in the programmatic approach to eliminating hazards identified by an analysis is the implementation of feasible design/engineering changes to eliminate the hazard. The second consideration is the employment of feasible administrative adjustments in conducting the task to avoid or eliminate the hazard. Finally, management employs the use of Personnel Protective Equipment (PPE) and S&H training to aid in the avoidance of any remaining hazards.

An analysis following the requirements of PRO-SH-012, *Conducting a Medical Needs Analysis*, shall be conducted when work occurs at remote locations (as defined in the procedure) or on shifts when the NTS medics are not regularly scheduled to be present in Area 25.

Managers/supervisors are responsible for evaluating work activities within their groups to identify specific hazards to which employees may be exposed and to take appropriate measures as identified in this section.

## 2.4 SAFETY PROCEDURES

The S&H Manager is responsible for recognizing the need for specific S&H procedures and then developing and maintaining them. It is the responsibility of managers/supervisors to implement S&H procedures. The S&H Manager is the sole authority on interpretation of S&H procedures' applications and implementation in the event aspects of any procedure are questioned. All S&H procedures will be reviewed annually and revised as necessary. The S&H Manager will document reviews that do not call for any revisions.

Various safety program elements are also addressed through procedures created by other M&O departments, Nevada Work Instructions, or other written instructions. These include, but are not limited to:

- PRO-TS-017, *Lockout/Tagout Process*, which provides control of energy sources that present a hazard when performing maintenance and repair work on equipment or systems
- Underground safety requirements and safety matters described in:
  - YAP 30.39, *Exploratory Study Facility Tunnel Access Approval Process*, which covers check-in/check-out
  - GUT for employees going in the tunnel
  - The tunnel supervisors daily log noting safety conditions in the tunnel and its workings
  - NWI-ESF-032, *Underground Rescue*
  - *Exploratory Studies Facility (ESF) Ventilation System Plan Including the Repository Block (ECRB) Cross Drift* (CRWMS M&O 1998a)
  - Underground safety rules in the *Employee Safety Handbook* (CRWMS M&O 1999a)
- The Assured Equipment Grounding program described in *Yucca Mountain Site Characterization Project Exploratory Studies Facility (ESF) Electrical Equipment Operations and Maintenance Manual* (CRWMS M&O 1999b)

## 2.5 WORK SITE CONTROL

The M&O organization that controls a work site will establish appropriate safety procedures for activities on that site and any necessary access controls for the site. When employees from other

M&O organizations, DOE, DOE contractor personnel, or visitors enter the controlled area, they will obey the procedures and rules in effect. Failure to obey work site procedures can result in removal of the employee or visitor from the work site.

The M&O is responsible for protection and control of YMP visitors. Means of logging visitors into Area 25 have been established. Visitor escorts are responsible for ensuring that visitors log in at the Field Operations Center in Area 25, are briefed on workplace safety procedures and adhere to them, and are neither endangered by, nor interfere with, operations.

## **2.6 MOTOR VEHICLE SAFETY**

The vehicle safety program is primarily targeted at passenger vehicle usage. Safety rules for vehicles and powered industrial trucks are found in the *Employee Safety Handbook* (CRWMS M&O 1999a). Regulations for operating onsite and offsite are governed by Nevada traffic regulations. Some motor vehicle safety requirements are found in YAP-30.23, *Motor Vehicle Management for the Yucca Mountain Site Characterization Project*. No employee may operate a vehicle without a valid driver's license.

A letter from the AGM to all M&O employees, April 8, 1997, describes the M&O policy on Enforcement Provisions for Government Vehicle Operations.

The M&O Training Department maintains the capability to conduct a defensive driving course.

## **2.7 LASER SAFETY**

The S&H Manager may appoint one or more qualified individuals as a Laser Safety Officer. The Laser Safety Officers coordinate with the S&H Manager in preparing an operating procedure for each laser application on the YMP, classifying each laser, coordinating the registration/permit process, and monitoring all laser operations and maintenance.

# **3. INDUSTRIAL HYGIENE AND MEDICAL PROGRAM**

## **3.1 WORKPLACE MONITORING AND CONTROL PRINCIPLES**

The first objective of the Industrial Hygiene (IH) program is recognition of any environmental agents or conditions in workplaces that have the potential to cause adverse health effects. Recognition of a potential problem prompts an evaluation of the workplace to determine if controls must be instituted to ensure employee exposure at safe levels. PRO-SH-003, *Compliance with the Occupational Safety and Health Administration Hazard Communication Standard*, directs supervisors to seek evaluation from the M&O IH staff for hazardous substances introduced into a workplace. Industrial hygienists revisit workplaces as part of the continuing program to evaluate current conditions. Calibration and maintenance of IH monitoring equipment is the responsibility of the industrial hygienists. Development of sample databases and survey documentation is done in accordance with regulatory or DOE requirements. Each suspected health hazard will be subjected to a baseline assessment, and a health hazard inventory will be maintained. These functions are the responsibility of the S&H Manager.

The implementation of controls is based on the same hierarchical premise described in Subsection 2.3. Environmental agents will be controlled by providing feasible engineering controls, including substitution. If the condition is not satisfactorily resolved, then consideration will be given to instituting feasible administrative controls. If an adverse condition(s) exists after these efforts, then the use of PPE to provide protection from overexposure to the agent(s) will be employed. Each agent and each work site presents unique characteristics, difficulties, and solutions. The final solution in each case is tailored by engineers, line management, and the IH staff to produce an effective solution in the most economical way. Subsection 3.2 describes the procedures that control specific IH programs and assigns roles and responsibilities.

### **3.2 SPECIAL IH PROGRAMS**

Specific control programs are addressed in the following paragraphs. In addition to these, special emphasis programs may be implemented by managers/supervisors working with the S&H Manager to solve persistent problems as similarly noted in Subsection 2.1.

#### **3.2.1 Respiratory Protection Program**

Determination of the need for respiratory protection is made by the S&H Manager after workplace sampling shows that applied engineering and administrative controls have not reduced an airborne agent below the required exposure limits. PRO-SH-009, *Respiratory Protection Program*, controls implementation of the respiratory program. No respiratory protection devices may be introduced on the YMP without the prior approval of the S&H Manager. The S&H Manager also determines the protocols for sampling airborne agents, approves the instruments to be used, the methods for calibrating them, and the protocols for sample and data collection, storage, and interpretation.

#### **3.2.2 Hearing Conservation**

Employees are subjected to varying noise levels at YMP work sites. Industrial hygienists conduct noise surveys to determine if controls should be implemented. If hearing protection devices are necessary, industrial hygienists will inform affected managers/supervisors and provide recommendations for barricade/signage placement to establish restricted hearing protection zones. The requirements of PRO-SH-004, *Hearing Conservation Program*, determine hearing device selection, fit testing, employee training, and other program steps taken to protect employees' hearing. No hearing protection devices may be introduced on the YMP without the prior approval of the S&H Manager. PRO-SH-004 controls the implementation of this program.

#### **3.2.3 Other PPE**

Other PPE such as footwear, hardhats, safety glasses, and special protective devices not routinely used (e.g., fall protection), must be approved by the S&H Manager. The establishment of when and where these items are needed is also the S&H Manager's responsibility. The process by which employees obtain appropriate footwear and prescription safety glasses is described in PRO-SH-002, *Procurement of Required Personal Protective Equipment*.

### **3.2.4 Hazard Communication Program**

A hazard communication program has been established to meet the requirements of 29 CFR 1910 and 29 CFR 1926. Implementation of these requirements is described in PRO-SH-003.

### **3.2.5 Carcinogen Exposure Control**

Carcinogens on the YMP are introduced into the workplace as purchased chemicals and materials or may occur naturally. The process for controlling exposure to carcinogens introduced into the workplace is described in PRO-SH-003.

Exposure control to naturally occurring carcinogens is accomplished by complying with procedures PRO-SH-003; PRO-SH-014, *Silica Protection Program*; and PRO-SH-016, *Erionite Exposure Control*.

### **3.2.6 Ergonomic Program**

Knowledge of proper workplace design can avoid chronic physical injuries. This is particularly true for many office workers. Recognizing there is a problem and seeking S&H support is a shared responsibility of both employees and managers/supervisors. The S&H Manager maintains the staff capability to evaluate work stations for ergonomic stressors and provides recommended mitigations. It is line management's responsibility to implement corrective actions. Ergonomic guidelines are provided in the back of the *Employee Safety Handbook* (CRWMS M&O 1999a).

### **3.2.7 Temperature Extremes**

Precautions must be taken to guard against the effects of excessive heat or extreme cold. PRO-SH-008, *Occupational Heat Stress*, describes how these effects are controlled. Line management is responsible for implementing procedures developed by the S&H Manager to mitigate the effects of temperature extremes.

### **3.2.8 Confined Spaces**

Entry into confined spaces is prohibited unless employees have a work authorization to perform a task in that space. Authorized entry into an identified confined space, or any space meeting the definition of a confined space, is controlled by PRO-SH-013, *Working in Confined Spaces*. The definition of a confined space, precautions, how the entry is authorized, and how the work is set up are all found in PRO-SH-013.

## **3.3 SMOKING POLICY**

The M&O complies with General Services Administration requirements prohibiting smoking in all government buildings and vehicles. The smoking prohibition shall be strictly enforced. Enforcement of this policy is the responsibility of M&O facility and vehicle fleet managers.

### **3.4 OCCUPATIONAL HEALTH CARE AND JOB SURVEILLANCE**

The M&O contracts with a medical provider for services on the YMP. The contract includes emergency care and transport as well as certain health monitoring services. The S&H Manager staffs an Occupational Health Nurse (OHN) to implement and coordinate health monitoring and employee assistance programs.

The objective of health monitoring is to examine employees exposed to hazardous environmental agents in a timely manner to preclude the onset of occupational illnesses and to establish that they are physically fit for the work assigned and fit to don necessary protective devices. To meet this objective, medical resources are allocated in a manner that maximizes funding to higher risk needs and reduces funding to lower risk peripheral services as appropriate.

PRO-SH-007, *Medical Surveillance*, describes how managers/supervisors and employees arrange for routine physical examinations, follow-up monitoring, and termination exams. It establishes responsibilities for the M&O and the medical provider to maintain records.

Preplacement screening will be conducted based on job requirements identified in job descriptions and in agreement with the medical provider. The OHN and the medical provider review the job descriptions along with other appropriate information to determine preplacement screening needs and if there should be ongoing medical monitoring. Employees with baseline examinations for these jobs will also receive a physical examination upon termination.

Employees must present a "return-to-work" authorization from their physician to their supervisor when they miss one or more days because of an occupational injury or illness.

A substance abuse program including sampling/monitoring will be established when the YMP falls within the scope of 10 CFR 707, Workplace Substance Abuse Programs at DOE Sites.

### **3.5 EMPLOYEE ASSISTANCE PROGRAM**

The establishment of employee assistance programs is coordinated by the OHN with each M&O participant.

## **4. FIRE PROTECTION**

### **4.1 FIRE PREVENTION**

This section constitutes the M&O written fire prevention program. The M&O is responsible for protection of YMP property under its control. Because the YMP does not have its own fire department, the Project depends on contracted NTS services to fight any large structure fire, interior structure fire, or range fire in Area 25. In the present NTS environment, the contracted fire fighting services are approximately one hour's response time to the YMP's most remote facilities, including the Exploratory Studies Facility. Recognizing these facts, the M&O's policy in developing the program is dictated as being one of relying on fire prevention and incipient fire control.



These two objectives are achieved by liberal distribution of portable fire extinguishers, use of automated fire suppression systems, alarm systems, placement of special application extinguishers as appropriate, minimization of flammable and combustible liquids use, proper storage of flammable and combustible liquids, incorporation of fire resistant materials, good housekeeping practices, and vigilance. Managers/supervisors and employees have a common stake in maintaining workplace cleanliness, proper storage of combustible liquids, control of heat sources, and enforcement of smoking and other open flame prohibitions. Supervisors are responsible for ensuring that employees understand the basic steps of operating a fire extinguisher and where the fire extinguishers are located in their work area. Portable fire extinguishers in each facility are inspected and maintained by the facility manager. For both surface and underground operations, employees are not expected to attempt to control any fire that has progressed beyond the incipient stage. Beyond incipient stage fires, employees are expected to disengage and evacuate the facility or take other emergency measures as prescribed for their workplace. Vigilance is also accomplished through the OSCR surveillance system described in Subsection 2.1. The M&O Architectural Engineer and other document originators give appropriate consideration to fire control measures in developing designs, specifications, and FWPs. The S&H Manager provides fire control expertise to these document originators as requested and reviews their products to determine that appropriate measures are applied. All NFPA codes are universally applicable with the exception that NFPA 101, Life Safety Code, is not applicable to the underground workings.

#### **4.2 FACILITY ASSESSMENT AND HAZARD ANALYSIS**

All facilities, whether owned or leased by the YMP, are assessed for their fire protection needs. A Fire Risk Assessment is conducted, as required, for each facility and reviewed when the facility is substantially modified or its use is changed. These analyses establish the facility's value in property terms and its importance to YMP's business continuity. These analyses describe the current condition and the changes, if any, needed for compliance with applicable DOE Orders and NFPA codes. Costs are estimated to bring the facility into compliance, and a report with recommendations (including accepting the risk of no action) and the associated costs are forwarded to the DOE.

When a Fire Risk Assessment identifies deficiencies in a facility's fire protection systems or procedures, the S&H Manager shall prioritize the deficiencies, make recommendations to line management for correction, and monitor the deficiencies until they are resolved. Line management will implement appropriate interim measures until a resolution is achieved.

New facilities and major modifications to existing facilities are also analyzed using SSAs. Mitigations for fire potential are identified for line management implementation.

## 5. EMERGENCY RESPONSE

### 5.1 RESPONDING TO EMERGENCY EVENTS

An essential part of the S&H program is the proper response to emergencies of all varieties, including medical emergencies, fire alarms and evacuation of facilities, bomb threats, power failures, and severe weather. For Area 25, line management complies with *Emergency Management Plan* (YMP 1998a), and PRO-SH-005, *Emergency Management*. For facilities located in Las Vegas, emergency procedures tailored for each building are described in the YMP phone directory. Evacuation routes are posted in each facility, and floor monitor listings are placed in the facility's safety bulletin board.

The S&H Manager is responsible for maintaining PRO-SH-005. Area 25 tenant managers are responsible for developing facility-specific plans, training employees on evacuation routes, making appropriate notifications in an emergency situation, and accounting for personnel in an emergency.

## 6. REFERENCES

### 6.1 DOCUMENTS CITED

CRWMS M&O (Civilian Radioactive Waste Management System Management and Operating Contractor) 1998a. *Exploratory Studies Facility (ESF) Ventilation System Plan Including the Repository Block (ECRB) Cross Drift*. BABFAD000-01717-4600-00001 REV 01. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19980417.0678.

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